

Somak Shivlani

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EDUCATION

University of Miami, College of Arts and Sciences

Coral Gables, FL

Master of Science in Computer Science, GPA: 3.84

May 2026

Bachelor of Science in Computer Science, Minor in Mathematics, GPA: 3.70

May 2026

Honors: Dean's List (All Semesters)

Relevant Coursework: Software Engineering; Machine Learning; Autonomous Robotic Systems; Computer Vision; Computational Neuroscience; Statistical Analysis; Statistical Learning; Computer Graphics; Cybersecurity; Computational Geometry

SKILLS

Spoken Languages: Fully proficient in English and Spanish; intermediate level proficiency in French.

Programming Languages: Python; C++; Rust; JavaScript; Java; SQL

Technical Skills: AWS (EC2, Lambda, S3, Bedrock); Docker; REST APIs; WebSockets; SQL Databases; Vector Databases; Data Pipelines; Distributed Systems; PyTorch; LLM Systems; RAG; FAISS; Qdrant; Computer Vision; Multimodal ML

WORK EXPERIENCE

Textile Labs

Miami, FL

Founding Lead Machine Learning Engineer

February 2025 – Present

- Co-founded a privacy-first AI startup and led development of a distributed on-prem platform for document indexing, API orchestration, OCR processing, and large-scale enterprise data retrieval across customer infrastructure.
- Designed and implemented scalable backend services for stateful workflow execution, integrating document processing, email automation, and structured data APIs into a unified platform.
- Engineered scalable backend orchestration pipelines integrating 6+ services with structured routing, validation, asynchronous task execution, and fault-tolerant error handling.

Cummins Cederberg Coastal & Marine Engineering

Coral Gables, FL

Engineering Data Scientist Intern

January 2025 – December 2025

- Developed a large-scale document indexing and retrieval platform using FAISS and local inference services that expanded searchable internal documentation coverage by 80%, improving access to previously underused project, support, and general engineering knowledge documentation.
- Deployed an on-prem LLM assistant using Docker, llama.cpp, and FastAPI, enabling private AI-assisted workflows across 50+ engineering users spanning 3 departments with structured prompting and output validation.
- Built a computer vision pipeline to detect boat-engine scarring in seagrass from satellite imagery, achieving 85% precision across 3,000 annotated image samples to support QA/QC for field-survey prioritization.

University of Miami, Department of Computer Science

Coral Gables, FL

Research Assistant

August 2024 – May 2026

- Developed PyTorch-based semi-automatic segmentation pipelines, reducing manual labeling requirements across image annotation workflows.
- Trained and evaluated ResNet18-based models across 20 experiments, using Dice score, cosine similarity, and angular similarity to compare segmentation performance.

PROJECTS

Textile Desktop Application

February 2025 – Present

- Developed a high-performance retrieval framework combining vector search, query expansion, and reranking over distributed indexes, improving retrieval accuracy while supporting large-scale document collections.
- Built a fully offline inference and API serving stack using containerized services, quantized models, and schema-validated tool execution, achieving 10+ tokens/sec local inference.
- Engineered a modular multimodal embedding pipeline using ~250M parameters across captioning, audio transcription, and text encoding models, achieving unified semantic embeddings at ~8x smaller scale than 2B-parameter multimodal baselines.

Accounting Data Processing Automation

August 2025 – October 2025

- Developed an internal web application that automated the ingestion, validation, and transformation of corporate credit card transaction data into Deltek-compatible import templates, reducing expense report preparation from hours of manual processing to approximately 30 seconds while generating Deltek-ready outputs.
- Designed asynchronous data processing pipelines to clean, normalize, and aggregate large batches of financial records, eliminating repetitive manual data entry while improving data consistency and formatting accuracy.
- Engineered robust backend validation and rule-based preprocessing logic to handle malformed inputs and ensure upload-ready datasets for downstream accounting workflows.
- Built a user-facing web interface for accounting staff, streamlining financial data processing and reducing operational overhead.

LEADERSHIP & EXTRACURRICULARS

Bonsai Applied Computations Group

Coral Gables, FL

Project Manager

August 2024 – May 2026